

Call for Climate Emergency Action

(Recent Articles; Brief Overview; Key Organizations; Solution Perspective)

(22 pages; August, 2019)

in association with the

“Brainstorming 100% Reduction in Greenhouse Gases (GHG) ASAP Campaign” <http://bit.ly/321sn60>

(157 pages; June, 2019)

by Stefan Pasti, Founder and Resource Coordinator

The Community Peacebuilding and Cultural Sustainability (CPCS) Initiative

(www.cpcsi.org)

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I. It Really Is An Emergency: A Sampling of Key Graphs and Articles (excerpts, links)

A. Introductory Comments

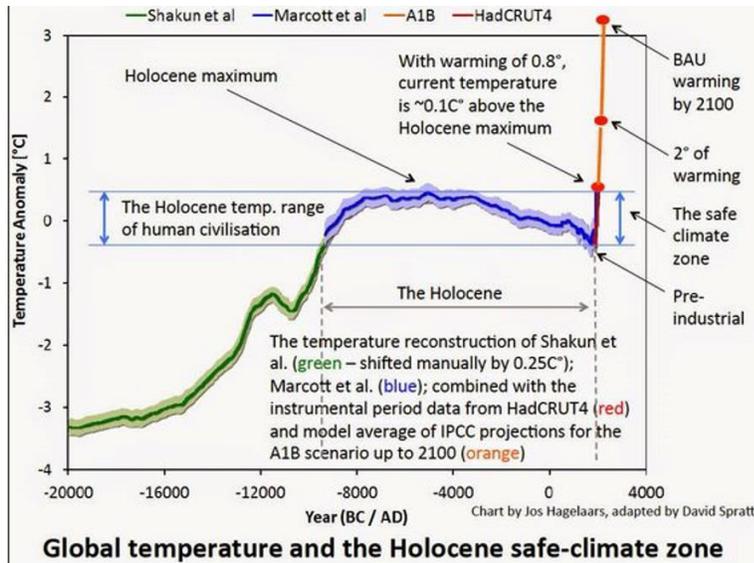
This writer has bookmarked approximately 500 articles on his computer in the last year--and liked another 500 tweets or so on Twitter--relating to Global Heating, the Climate Emergency, and many other challenges relating to achieving a zero carbon, sustainable, and peaceful world. And those articles and tweets were only a part of the resources used to compile key information for “[Harvest Song](#)” [78 pages (3.9 MB); Nov-Dec, 2018], and “[Brainstorming 100% Reduction in Greenhouse Gas \(GHG\) Emissions ASAP Campaign](#)” (157 pages; June, 2019)(both papers are also accessible on the homepage of www.cpcsi.org). We are at one of the most critical crossroads humanity has faced since the dawn of civilization. It is very, very important that most people know how close we are to irreversible Global Heating, and how close we are to catastrophic Climate Crises and Extinction Crises... and what to do to very, very quickly move towards positive tipping points. This writer has been made aware of many resources by way of people he is following on the Twitter platform; many other resources he found by searching on the Internet.

A. Where We Are: Visualizing the Basics

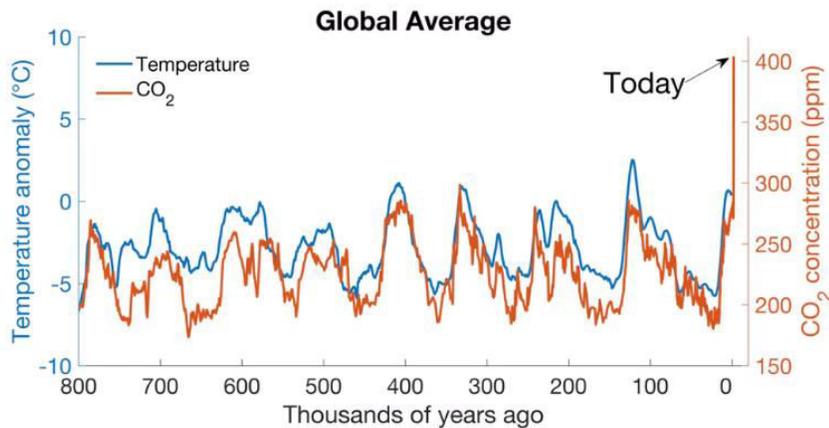


1) **Eric Holthaus** @EricHolthaus Nov 1 2018

Your periodic reminder of the news story of the millennium: We have left the 10,000-year climate "safe zone" that gave rise to human civilization.



2)



[from @benhenly and @dr_nerilie graph in article "The three-minute story of 800,000 years of climate change with a sting in the tail" (June 12, 2017) (at <https://theconversation.com/the-three-minute-story-of-800-000-years-of-climate-change-with-a-sting-in-the-tail-73368>) [Note: "A temperature anomaly is the difference from an average, or *baseline*, temperature. The baseline temperature is typically computed by averaging 30 or more years of temperature data. A **positive anomaly** indicates the observed temperature was **warmer** than the baseline, while a **negative anomaly** indicates the observed temperature was **cooler** than the baseline." (from <https://www.ncdc.noaa.gov/monitoring-references/dyk/anomalies-vs-temperature>)]

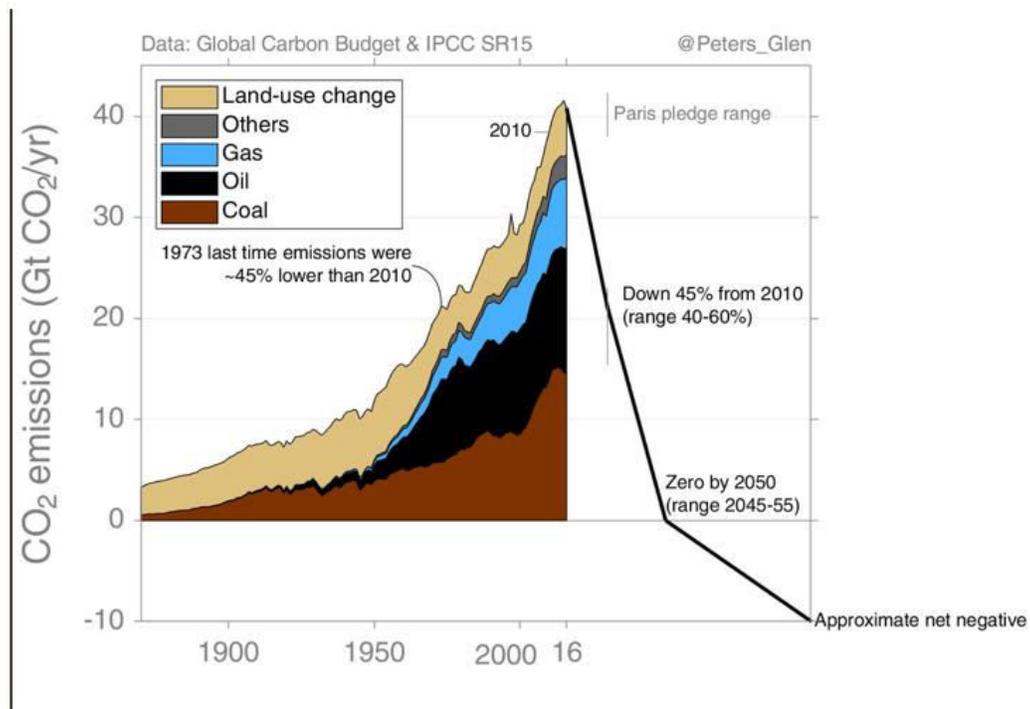


3) **Glen Peters** @Peters_Glen Oct 12 2018

[Note: by #SR15, Glen Peters is referred to the “IPCC Special Report on 1.5oC”. Here is a link to one news article reporting on the release of the report: “We have 12 years to limit climate change catastrophe, warns UN” by Jonathan Watts, Global Environment Editor, Guardian Monday 8 October 2018 <http://bit.ly/2SzfWsj>]

According to [#SR15](#), pathways with limited overshoot of 1.5°C require global net CO₂ emissions to decline by ~45% from 2010 levels by 2030 (40–60% interquartile), reaching net zero around 2050 (2045–2055 interquartile), & go negative thereafter (my estimate).

This is not easy...

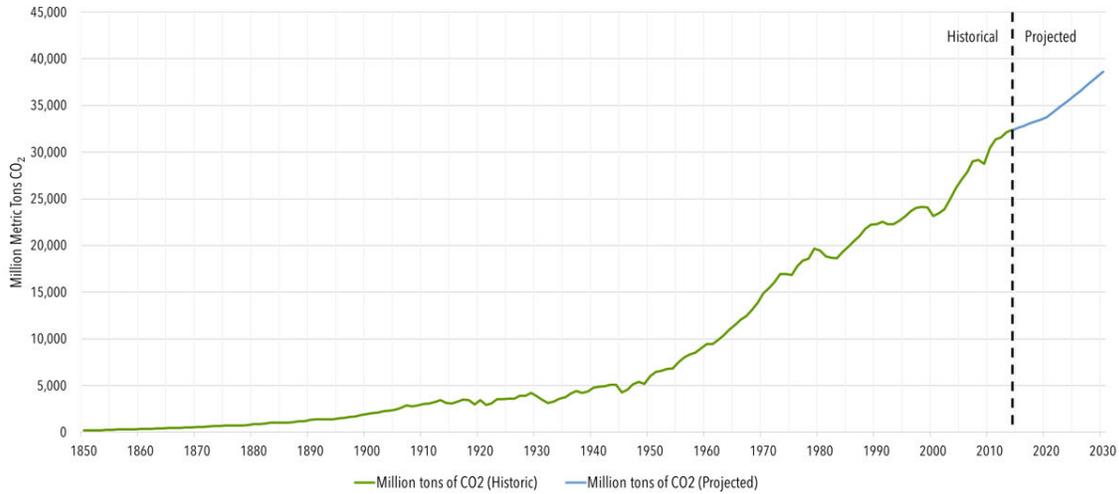


B. A Timeline of Reports, Articles, and other Educational Materials Warning About Global Warming (1988-2010)

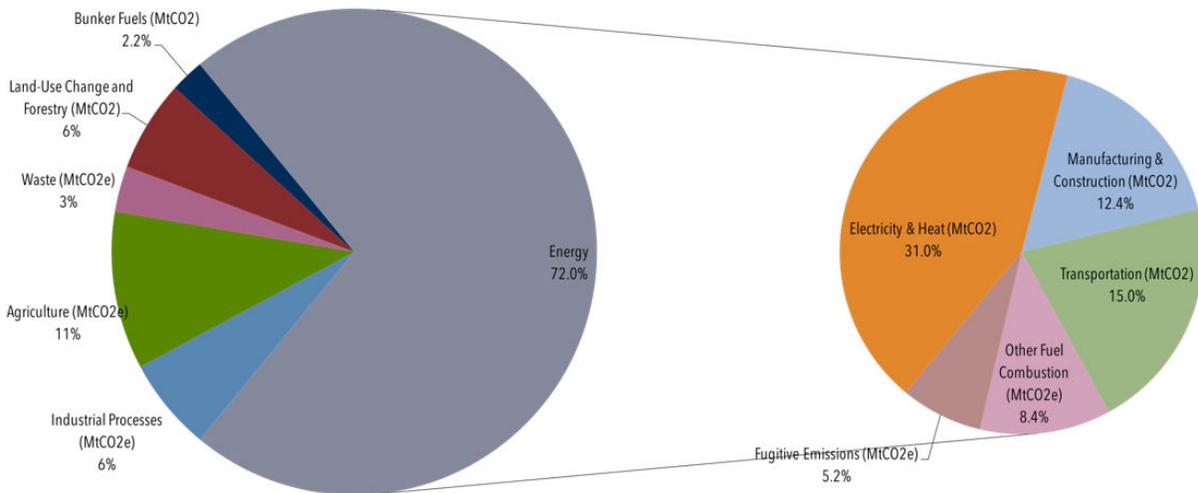
1) This writer has documented **28 warnings about Global Warming (now Global Heating) from the years 1988-2010**. The reports, articles, etc. are cited, key excerpts from the resources are included, and links provided. (on pages 273-301 in “Invitation Package for Possible Board of Advisors” (589 pages, 3.6MB; November, 2013) (at <http://bit.ly/2Es9KAg>)

C. Basic Carbon Emissions Data

1) Center for Climate and Energy Solutions “Global Emissions” Data Webpage (especially “Global Carbon Dioxide Emissions, 1850–2030” and “Global Manmade Greenhouse Gas Emissions by Sector, 2013” (at <https://www.c2es.org/content/international-emissions/>)



“Global Carbon Dioxide Emissions, 1850–2030”



“Global Manmade Greenhouse Gas Emissions by Sector, 2013”

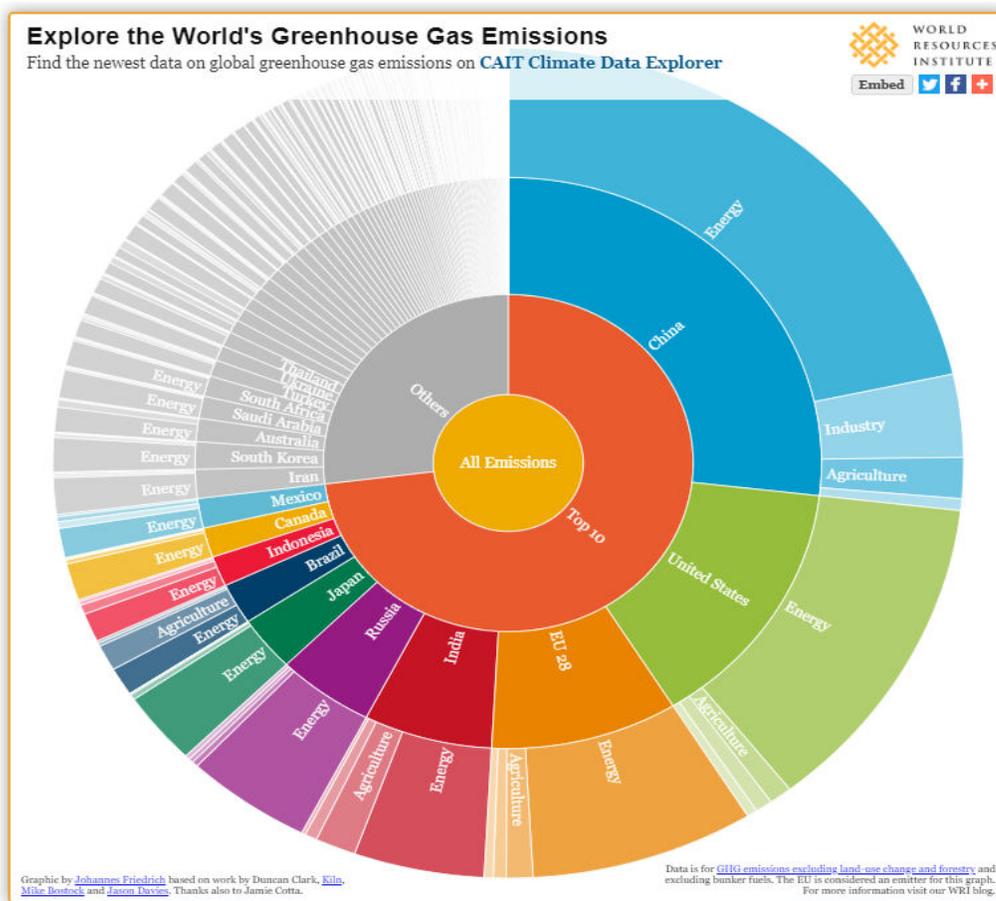
2) Sources of the World's Greenhouse Gas Emissions

[From article "This Interactive Chart Explains World's Top 10 Emitters...." (2013 data) by Johannes Friedrich Johannes Friedrich, Mengpin Ge and Andrew Pickens (April 11, 2017) at the World Resources Institute website (see <https://www.wri.org/blog/2017/04/interactive-chart-explains-worlds-top-10-emitters-and-how-theyve-changed>)][Note: 2013 data still relevant in 2019 with regard to which countries emit the most Greenhouse Gas Emissions, and the relative size of the energy sectors]

a) "The World's Top 3 Emitters Contribute 14 Times the Emissions of the Bottom 100"

"The top three greenhouse gas emitters--China, the European Union and the United States--contribute more than half of total global emissions, while the bottom 100 countries only account for 3.5 percent. Collectively, the top 10 emitters account for nearly three-quarters of global emissions. The world can't successfully tackle the climate change challenge without significant action from these countries."

b) "The Energy Sector Is the Major Culprit, but Action in Every Sector Counts"



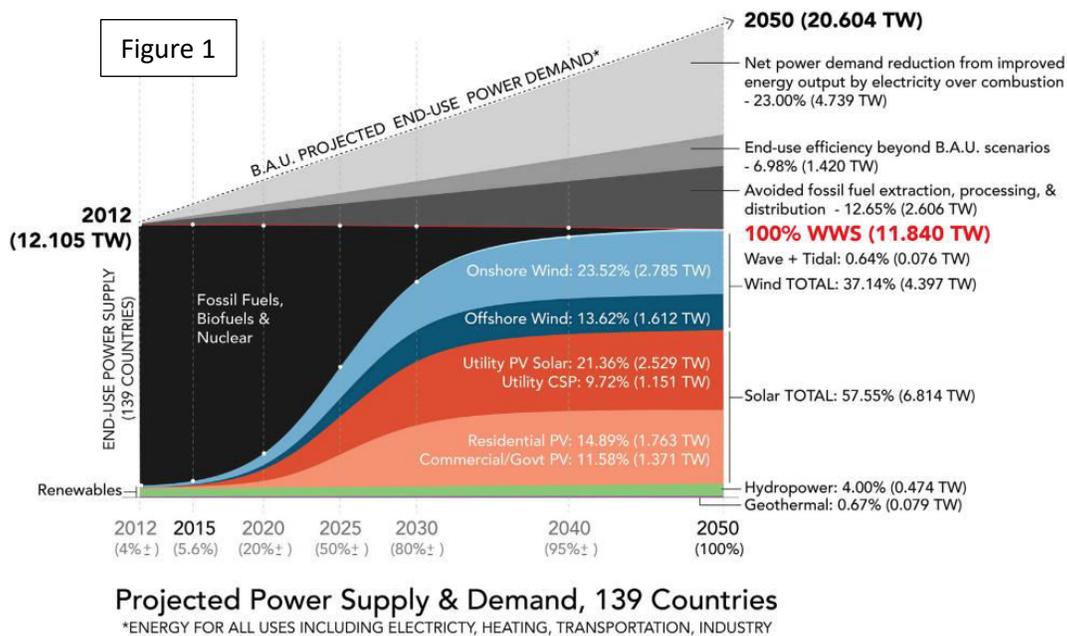
3) What is the Time Frame for Avoiding Irreversible Global Heating?

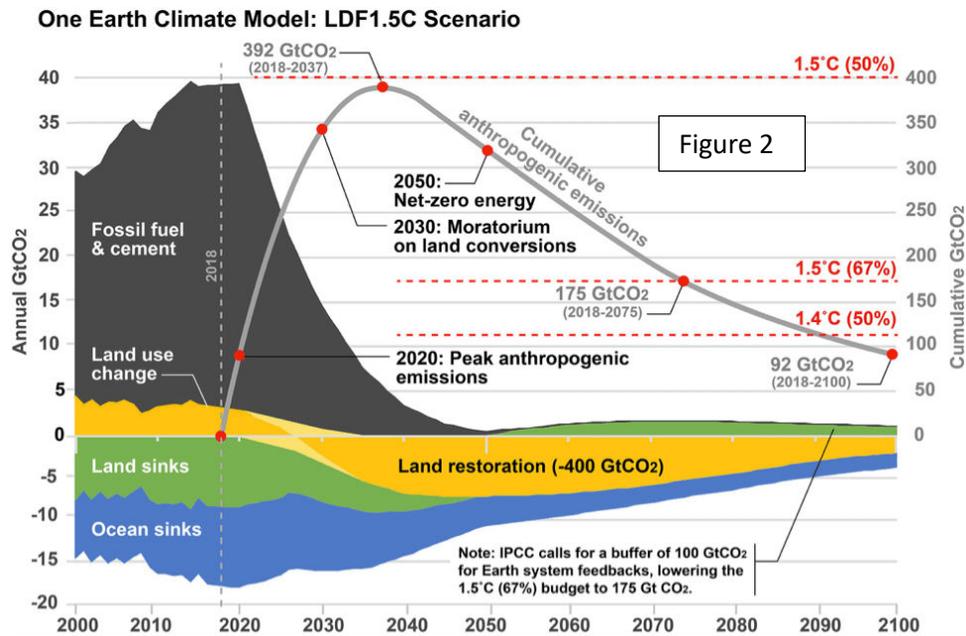
Many of the most recent projections for how much time we have indicate that we should make at least a 50% reduction in Greenhouse Gas Emissions before 2030, so that we might still limit Global Heating to 1.5°C, and limit the likelihood of irreversible and catastrophic Climate Breakdown. [However, recent negative feedback loops occurring far in advance of when they were predicted (see articles section, beginning on p. 7), are causing changes in our perceived “window of opportunity”. It’s now a Climate Emergency and an Existential Threat, to both humans and other life species, and ASAP is a more realistic time frame... which is why “over 900 local governments have declared a Climate Emergency” (as of 8/14/19)(see <https://www.theclimatemobilization.org/climate-emergency-campaign>).

Two example projections are below—

Figure 1-- Source: [“100% Clean and Renewable Wind, Water, and Sunlight All-Sector Energy Roadmaps for 139 Countries of the World”](#) Mark Z. Jacobson (Stanford University, CA) et al. in Joule 1 (energy journal) (p. 108-121) September 6, 2017 (Additional Sources: referred to Joule article by [“Most of the world’s countries could run on 100% renewable energy by 2050, says study”](#) by John McKenna at World Economic Forum **September 18, 2017**; and [The Solutions Project Interactive Map](#))]

Figure 2--[from an introductory webpage to the [“One Earth Climate Model”](#) at the website of the Leonardo DiCaprio Foundation The book describing the “One Earth Climate Model”--“Achieving the Paris Climate Agreement Goals: Global and Regional 100% Renewable Energy Scenarios with Non-energy GHG Pathways for +1.5°C and +2°C”--by Sven Teske, Ed. (491 pages) Springer, **2019** is accessible for free at <https://link.springer.com/book/10.1007%2F978-3-030-05843-2#editorsandaffiliations>]





D. Accelerating Negative Feedback (on Key Indicators)

1) **“Arctic wildfires** spew soot and smoke cloud bigger than EU: Plume from unprecedented blazes forecast to reach Alaska as fires rage for third month” by Jonathan Watts, Global Environmental Editor (Guardian) (August 12, 2019) “A spate of huge fires in northern Russia, Alaska, Greenland and Canada discharged 50 megatonnes of CO₂ in June and 79 megatonnes in July, far exceeding the previous record for the Arctic.” (at <https://www.theguardian.com/world/2019/aug/12/arctic-wildfires-smoke-cloud>)

2) **“Amazon deforestation** accelerating towards unrecoverable 'tipping point': Data confirms fears that Jair Bolsonaro’s policy encourages illegal logging in Brazil” by Jonathan Watts (July 25, 2019) “Scientists warn that the forest is in growing danger of degrading into a savannah, after which its capacity to absorb carbon will be severely diminished, with consequences for the rest of the planet. ‘It’s very important to keep repeating these concerns. There are a number of tipping points which are not far away,’ said Philip Fearnside, a professor at Brazil’s National Institute of Amazonian Research. ‘We can’t see exactly where they are, but we know they are very close. It means we have to do things right away. Unfortunately that is not what is happening. There are people denying we even have a problem.’” (at <https://www.theguardian.com/world/2019/jul/25/amazonian-rainforest-near-unrecoverable-tipping-point>)

3) **“Greenland Is Melting** Away Before Our Eyes” by Eric Holthaus (July 31, 2019) “With a decade or two of hindsight, scientists now believe Greenland passed an important tipping point around 2003, and

since then its melt rate has more than quadrupled. This week alone, Greenland will lose about 50 billion tons of ice, enough for a permanent rise in global sea levels by about 0.1mm. So far in July, the Greenland ice sheet has lost 160 billion tons of ice--enough to cover Florida in about six feet of water. According to IPCC estimates, that's roughly the level of melt a typical summer will have in 2050 under the worst-case warming scenario.... Altogether, the Greenland ice sheet contains enough ice to raise global sea levels by about 24 feet." (at <https://www.rollingstone.com/politics/politics-news/greenland-ice-sheet-melt-865803/>)

4) **"Are We Watching the Arctic Pass a Tipping Point This Summer?"** by Brian Kahn (July 30, 2019)
The heat wave that broke records in Europe is coming to Greenland and could melt enough ice to measurably raise global sea levels; wildfires are blazing on every continent, pumping carbon dioxide into the atmosphere; and sea ice is at record-low levels. Whether the region is at a tipping point or threshold is up for debate scientifically, but it's undeniable that we are staring at big, bad changes right now." (at <https://earth.gizmodo.com/are-we-watching-the-arctic-pass-a-tipping-point-this-su-1836824810>)

5) **"Major Planting Delays Across Corn Belt"** (US) American Farm Bureau Federation (May 19, 2019)
"With historic precipitation levels seen throughout the Corn Belt this spring, producers have not been able to get into the field to begin planting. Through May 9, the 19th week in the planting season, 30% of the U.S. corn crop has been planted, leaving an estimated 65 million acres left to plant." (at <https://www.fb.org/market-intel/major-planting-delays-across-corn-belt>)

6) **"Tree-damaging pests pose 'devastating' threat to 40% of US forests:** About 450 overseas pests have been introduced to US forests, a climate crisis resource, due to international trade and travel" by Oliver Milman (August 12, 2019) "A PNAS-published study of the 15 most damaging non-native forest pests has found that they destroy so many trees that about 6m tons of carbon are expelled each year from the dying plants." (at https://www.theguardian.com/environment/2019/aug/12/us-forests-pests-risk-climate-crisis-resource?CMP=share_btn_tw)

7) **"2°C: Beyond the Limit: Extreme climate change has arrived in America"** by Steven Mufson, Chris Mooney, Juliet Eilperin and John Muyskens Photography by Salwan Georges (August 13, 2019)
"A Washington Post analysis of more than a century of National Oceanic and Atmospheric Administration temperature data across the Lower 48 states and 3,107 counties has found that major areas are nearing or have already crossed the 2-degree Celsius mark. Today, more than 1 in 10 Americans--34 million people--are living in rapidly heating regions, including New York City and Los Angeles. Seventy-one counties have already hit the 2-degree Celsius mark." (at <https://www.washingtonpost.com/graphics/2019/national/climate-environment/climate-change-america/>)

8) “**India Continues to Be Ravaged by Floods and Drought at the Same Time**: 21 major cities in the country are expected to run out of groundwater by 2020, whereas over 200 people have been killed over the past month due to the floods” by Meera Navlakha (August 14, 2019) “All this amounts to a harsh new reality: climate change is on its way to make parts of India completely unlivable.” (at https://www.vice.com/en_in/article/mbmagy/india-continues-to-be-ravaged-by-floods-and-drought-at-the-same-time)

E. Negative Multiplier Effects from Climate Crisis

1) “UN Report: Nature’s Dangerous Decline ‘Unprecedented’; **Species Extinction Rates ‘Accelerating’**” (about “IPBES Global Assessment Report on Biodiversity and Ecosystem Service”) (May 6, 2019) “Nature is declining globally at rates unprecedented in human history--and the rate of species extinctions is accelerating, with grave impacts on people around the world now likely, warns a landmark new report from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)...” (at <https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/>)

2) “IPCC report shows **global warming threatens global food security**” (about IPCC “Climate Change and Land Report”) by Iselin Ekei Bonningsbakk (August 8, 2019) “Today, humans are impacting more than 70 percent of the ice-free land area, and food production is an important part of this land use. At the same time, about two billion people worldwide are overweight and 821 million are malnourished. In addition, around one third of all the food produced globally is either thrown away or destroyed, the report shows. ‘The report estimates that emissions from the global food system account for between 21-37 percent of manmade climate gas emissions. *This means that emissions from food production, processing, transport and storage are on the same level as those from the electricity, transport and industry sectors,*’ says CICERO senior researcher Bob van Oort.” (at <https://cicero.oslo.no/en/posts/news/ipcc-report-shows-global-warming-threatens-global-food-security>)

F. Some Key Positive Actions Being Taken

1) Project Drawdown Solutions List--Summary of Solutions by Overall Rank (with Comparison of 80 CO2 Drawdown Solutions by CO2 production, cost, and savings at <https://www.drawdown.org/solutions-summary-by-rank>)

2) “Global Climate Strike: Record number of students walk out” by Isabelle Gerretsen (May 24, 2019) “Climate protests are planned in more than 1600 towns in over 125 countries and organizers say the number of strikers is expected to surpass the 1.6 million people who took part in the first Global Climate

Strike in March.” (at https://www.cnn.com/2019/05/24/world/global-climate-strike-school-students-protest-climate-change-intl/index.html?utm_source=twCNN&utm_medium=social&utm_content=2019-05-24T14%3A31%3A05&utm_term=link)

3) “Our 100% Clean Energy Vision: Explore our interactive map to see what 100% renewable energy could look like where you live in the year 2050.” Interactive Map has projections for 100% Clean Energy for countries, cities, and states. The Solutions Project at <https://thesolutionsproject.org/why-clean-energy/>

4) The Climate Mobilization (key organization)
(accessed August 14, 2019)

a) “Mobilization is an emergency restructuring of a modern industrial economy, accomplished at rapid speed. It involves the vast majority of citizens, the utilization of a very high proportion of available resources, and impacts all areas of society....” “...A just transition means not only preventing unimaginable suffering from climate and environmental catastrophe, but also reinventing our economy to address the social inequities on which the extractive economy has been based. We can phase out polluting industries that are harmful to human and non-human life, and create new pathways for equitable, sustainable livelihoods. We can reinvigorate local economies with new industries that protect the climate while providing dignified, productive work for all.” (at <https://www.theclimatemobilization.org/climate-mobilization>)

b) “over 900 local governments have declared a Climate Emergency” (as of 8/14/19)(see <https://www.theclimatemobilization.org/climate-emergency-campaign>).

5) →(New) “New hub and innovation lab to share zero carbon solutions” (July 29, 2019) “A new Zero Carbon Britain Hub and Innovation Lab is being launched at CAT later this year to help communities, local authorities and policymakers to create Zero Carbon Action Plans, and to provide support for the development of innovative solutions.” [From a blog post at the Centre for Alternative Technology (at <https://www.cat.org.uk/new-hub-and-innovation-lab-to-share-zero-carbon-solutions/>)] *More information about the Center for Alternative Technology on p. 19-20.*

6) “Citizens assemble! Involving local people in shaping climate action in your area” by Rob Francis, Head of Central & Local Government and Head of Organisational Development at Traverse (stakeholder engagement) (August 5, 2019) “Across the country, local authorities are declaring climate emergencies. And having declared an emergency, local people may well ask ‘what now?’” (at <https://traverse.ltd/recent-work/blogs/citizens-assemble-involving-local-people-shaping-climate-action-your-area>)

- 7) "Climate emergency toolkit launched for local authorities" by SmartCitiesWorld news team (June 20, 2019) (at <https://www.smartcitiesworld.net/news/news/climate-emergency-toolkit-launched-for-local-authorities-4292>) "The toolkit demonstrates how action on climate change can deliver many local benefits, including improved health, increased equity and social cohesion, economic opportunities and increased resilience (at Ashden, next link)." Parts or whole of toolkit can be downloaded at <https://www.ashden.org/programmes/co-benefits> .
- 8) "The Guardian joins a major media initiative to combat the climate crisis: More than 60 news outlets worldwide have signed on to Covering Climate Now, a project to improve coverage of the emergency" by Guardian Environment (July 26, 2019) "This unique media collaboration, timed to coincide with landmark UN [Climate Action Summit](#) in New York, is the first initiative of Covering Climate Now, a project co-founded by The Nation and the Columbia Journalism Review, in partnership with The Guardian, which aims to kickstart a conversation among journalists about how news outlets can improve their coverage of the climate crisis. The project, which is still welcoming additional media partners, announced an initial list of [more than 60 partners today...](#)" (at https://www.theguardian.com/environment/2019/jul/25/the-guardian-joins-a-major-media-initiative-to-combat-the-climate-crisis?CMP=share_btn_tw)
- 9) "The global transition to clean energy, explained in 12 charts: Despite all the progress, we're still struggling to hit the climate emergency brake" (especially "Estimated Renewable Energy Share of Global Electricity Production, end-2018" and "Renewable Energy in Total Final Energy Consumption, by Sector 2016") by David Roberts @drvox (updated Jun 26, 2019) (at <https://www.vox.com/energy-and-environment/2019/6/18/18681591/renewable-energy-china-solar-pv-jobs>)
- 10) 2019 IAP2 North American Conference: "Leveraging P2 (Public Participation) to Create Thriving Communities" (Charlotte, NC; September 4-6, 2019) WORKSHOP--"P2 And Digital Engagement" (September 4, 1:00 pm-4:00 pm) "If you want to work through the ins and outs of incorporating online engagement into your toolbox..." (at <https://iap2usa.org/event-3479586>)

II. Brief Overview of Brainstorming Zero Carbon ASAP Campaign

A. Introduction

This Brainstorming 100% Zero Carbon ASAP Campaign proposes to streamline to frontlines of public discourse the best 5-10 page overviews of how we can achieve a 100% reduction in Greenhouse Gas Emissions ASAP--and thereby catalyze local Community Visioning Initiatives, and contribute significantly to maximizing “all hands on deck” participation in positive tipping point activity (Example Community Visioning 13 minute documentary “Chattanooga: A Community with a Vision” <http://bit.ly/2uE1XX5>)(highly recommended).

The Brainstorming 100% ASAP Campaign <http://bit.ly/321sn60> identifies organizations and institutions which are already contributing in trustworthy, verifiable, and peer-evaluated ways to guiding public discourse towards achieving 1.5°C--and asks them to provide a 5-10 page overview of best ways to decrease emissions by 100% ASAP. Further--*since there are still three to eight decades of unprecedented cultural transformation ahead of us, and because there are numerous other unprecedented challenges (see p. 19 of “Brainstorming” paper) which also need urgent attention--*the Brainstorming 100% ASAP Campaign also makes a call for 5-10 page overviews from organizations and institutions critical to education, ecological sustainability, communication, access to basic needs, emergency assistance, social cohesion, preserving roots of wisdom and compassion, etc.--as such organizations and institutions are directly or indirectly related to Climate Breakdown mitigation... and as part of the many steps still required to provide a most comprehensive picture of what actions need to be prioritized at local community level (Appendix 10 potential recipient list includes 616 organizations and institutions with 98.9 million followers as recipients of first call requests for 5-10 page overviews).

100-150 of the best 5-10 page overviews can function as a needs assessment, of the kind which precedes local Community Visioning Initiatives--as such will help residents see the need for Community Visioning and many supporting Neighborhood Learning Centers. Universities and colleges--which are already far advanced in recognizing and implementing climate change solutions--will be natural lead organizations for building the partnerships necessary to carry out Community Visioning Initiatives in their local community.

Such 5-10 page overviews can also be a key resource for the “over 900 local governments (that) have declared Climate Emergency” (as of 8/14/19)(see <https://www.theclimatemobilization.org/climate-emergency-campaign>).

This Brainstorming Campaign can accelerate opportunities for people around the world to become part of a system of mutual support, encouragement, and positive tipping point action in their local communities.

B. Local Community Visioning Initiatives with many supporting Neighborhood Learning Centers (brief overview) (much more detail on p. 30-38 in 157 page “Brainstorming 100%...” paper <http://bit.ly/321sn60>)

- 1) Preliminary surveys of 150 key local leaders from a significant variety of fields of activity--asking about perceived challenges and solutions in light of clearinghouse of 5-10 page overviews from thousands of tipping point related organizations and institutions. (Note: both the clearinghouse of 5-10 page overviews, and the responses from such key local leaders surveys, will help residents see the need for Community Visioning and many supporting Neighborhood Learning Centers.)
- 2) Universities and colleges assisting with Community Visioning--and providing related curriculum, workshops, and teacher training, to support many Neighborhood Learning Centers (Example Community Visioning--13 minute documentary “Chattanooga: A Community with a Vision” (<http://bit.ly/2uE1XX5>)(highly recommended)
- 3) Many Neighborhood Learning Centers providing support for Community Visioning Initiatives; and providing places in local neighborhoods, for discussion, information sharing, mutual support and encouragement, fellowship and friendship
- 4) Local Newspapers reporting on--
 - a) preliminary surveys of 150 key local leaders from a significant variety of fields of activity
 - b) different stages of Community Visioning process
 - c) the countless workshops at Neighborhood Learning Centers
 - d) the job fairs at the end
- 5) Residents (especially those who are unemployed) who volunteer time and energy to assist with Community Visioning and resulting action plans are compensated with local currency
- 6) The job fairs at the end of the Community Visioning Initiative process providing opportunities for all key stakeholders in the community (businesses, organizations, institutions, government, etc.) to offer and facilitate new employment opportunities.
- 7) Local leaders of religious/spiritual traditions stepping up on every frontline possible to help people understand the urgent need to—
 - a) sacrifice personal desires for the greater good
 - b) choose forgiveness, and reconciliation--*and abstaining from violent conflict resolution*--as a way of bringing cycles of violence to an end and
 - c) create community life and cultural traditions which “... bring to the fore how many good people there are, how many ways there are to do good, and how much happiness comes to those who extend help, as well as to those who receive it”.

All readers have to do is think of what kind of difficulties we may, or will, face in the unprecedented cultural transformation ahead of us... and it will dawn upon them how much they will be hoping that the people they need to cooperate with in their local community have been inspired--*somehow*--to think carefully, act honestly, work diligently, and have compassion for their fellow human beings, in all the circumstances of their lives.

Summary: 1000 Universities, colleges assisting with carrying out local Community Visioning Initiatives
+ many supporting Neighborhood Learning Centers
= an exponential acceleration in solution-oriented activity.

C. Where Selective Buying Comes In

Asking thousands of positive tipping point related organizations and institutions for 5-10 page overviews on how to achieve 100% reduction in Greenhouse Gas (GHG) Emissions ASAP--

- 1) makes available all the known key emission reduction pathways in a form most people can read
- 2) provides a clear visualization of transformations needed in every aspect of our lives—since different organizations will focus on priorities in their fields of activity
- 3) provides the equivalent of a needs assessment for local communities, of the kind which precedes Community Visioning

Education during the process of a comprehensive Community Visioning Initiatives (a series of community meetings for maximizing citizen participation in identifying challenges and solutions--see p. 30-36 in the Brainstorming paper), and especially in Neighborhood Learning Centers, will lead to residents becoming aware of—

- a) how the investments of time, energy, and money (the “votes”) each of us make in our everyday circumstances become the larger economy
 - b) how to downsize their carbon footprint, and voluntarily use much less energy
 - c) where to buy what material purchases and services they absolutely need--so they can contribute the most possible to carbon-neutral supply chains
- and provide local newspapers, and other news sources, with d) numerous ways of reporting on this Accelerating Climate Emergency Action process.

There are many communities and regions which are ready to transform at every level to achieve zero carbon and sustainability goals--and to respond to many other challenges as well [Example: “over 900 local governments have declared a Climate Emergency” (as of 8/14/19)(see <https://www.theclimatemobilization.org/climate-emergency-campaign>)].

III. Organizations for Possible Collaboration

A. Climate Mobilization

The Climate Mobilization

@MobilizeClimate

We're building a movement for WWII-scale mobilization that protects humanity and the natural world. Join us!

Divest Invest

@divestinvestorg

A dynamic movement of investors catalyzing shifts in finance & energy. Let's #FuelChange: Pledge to divest from fossil fuels and invest in clean energy for all.

Project Drawdown

@ProjectDrawdown

Project Drawdown is a research, analysis, and communications NGO working toward Drawdown, the point when greenhouse gases begin to decline. #climatesolutions (with Comparison of 80 CO₂ Drawdown Solutions by CO₂ production, cost, and savings at <https://www.drawdown.org/solutions-summary-by-rank>)

Transition US

@TransitionUS

Nonprofit organization providing inspiration, encouragement, networking, support, and training for #TransitionTowns Initiatives building community resilience.

B. Universities, Colleges

ISCN Secretariat

@ISCNSecretariat

The International Sustainable Campus Network is a non-profit association of global colleges & universities working to integrate sustainability into all they do

AASHE

@AASHENews

An association of colleges and universities that are working to create a sustainable future.

Second Nature

@LeadOnClimate

Accelerating climate action in, and through, higher education by mobilizing a diverse array of higher education institutions to act on climate.

CampusEcology

@CampusEcology (a National Wildlife Federation project)

@NWF's CampusEcology program promotes climate leadership & sustainability on campus with resources, events, publications & examples. <http://facebook.com/campusecology>

GreenerU

@Greener_U

GreenerU works with colleges and universities to lead the world in mitigating climate change through engineering campus sustainability.

The SEED Center

@theseedcenter

SEED provides online resources for community colleges to build & improve their green economy education and workforce training programs.

CtrForGreenSchools

@mygreenschools

Official account of the Center for Green Schools at @USGBC. Connecting w/ #schools & #campuses to achieve our vision: #greenschools for all w/in this generation

FEE Global

@FeeInt

The world's largest environmental education organisation - we have five programmes helping communities live a more sustainable life. #FEEglobal #YesFEEcan

Gaia Education

@GaiaEducation

Leading provider of #Sustainability education that promotes thriving communities within planetary boundaries. Upcoming (link: <http://bit.ly/gaiaedu-upcoming>) CEO @may_east

Ashoka U

@AshokaU

Transforming universities into hubs of social innovation. Join us here: (link: <http://ashokau.org/subscribe/>)

Teachers W/O Borders

@teachersnetwork

Teachers Without Borders connects teacher leaders, worldwide, to information and each other

Talloires Network

@TalloiresNet

Universities that engage communities, serve the public, and collaborate across borders.

Work Colleges

@WorkColleges

Work College Consortium. Work Service Learning.

Berea LiveGreen

@bera_livegreen

“Learning by Living”, Berea's College Deep Green Residence Hall: solar/geothermal energy, living systems, urban agriculture, daylighting, education, inspiration

Oberlin Project

@OberlinProject (currently not active, but plans at website are detailed and valuable)

Creating a thriving post-fossil fuel economy (link: <http://new.oberlin.edu/events-activities/after-fossil-fuels/>) new.oberlin.edu/events-activit...

Oberlin OES

@OberlinOES

Oberlin College Office of Environmental Sustainability.

SustainableUNH

@SustainableUNH

Discover the sustainable learning community at the University of New Hampshire (UNH).

sustain Appalachian

@sustainApp

sustainability is the capacity to endure; environmentally, socially & economically. tweet with us & office of sustainability.

MU Sustainability Office

@MUSustainOffice

The University of Missouri's Sustainability Office seeks to ingrain sustainability principles of social equity, environmental stewardship & economic prosperity.

And many more university sustainability offices... this writer has an outreach list of 140 sustainability offices in universities and colleges (both in the U.S. and elsewhere).

C. Stakeholder Engagement

IAP2 USA

@IAP2USA

Preeminent international organization advancing the practice of #publicparticipation in the U.S.

Delaney and Associates

@DELANEYinc

We help organizations engage stakeholders and the public. We facilitate and improve collaboration for better decision-making.

traverse

@traversepeople

Navigating complexity and controversy in the changing world of public services.

NCDD

@ncdd

National Coalition for Dialogue & Deliberation is the hub for an amazing community of thousands of innovators in dialogue, deliberation and public engagement.

Charles Holmes

@CharlesConnects

Learner, facilitator and educator with a passion for connecting, engaging, and mobilizing teams and communities to co-create shared futures.

D. Zero Carbon and Sustainable Community Resources

[Special Note: Since the first two entries have so much valuable information, some introductory notes are included with their Twitter profile.]

Ecovillage Findhorn

@EcoFindhorn

Ecovillage Findhorn is dedicated to radical education. Passionate about sustainable communities?

Experience Design for Sustainability or Ecovillage Training (Location: Findhorn, Scotland)

<https://www.ecovillagefindhorn.com/>

“A pioneering ecovillage since 1985, receiving Best Practice designation from the United Nations Centre for Human Settlements (Habitat). A major centre for holistic learning serving 9,000 visitors a year from over 50 countries. The Findhorn Foundation has one of the lowest recorded ecological footprints for any community in the industrialized world, just half the UK national average, and has birthed more than 50 businesses and social ventures in the local region.”

- Over 60 ecologically benign buildings
- Numerous solar water heating systems
- Three wind turbines with total capacity = 675kW; Biomass boiler heating system total capacity = 250 kW
- Biological Living Machine sewage treatment system
- Comprehensive recycling and composting scheme
- Our own community currency and community investment fund
- Served by a car-sharing club that includes zero-emissions electric vehicles”

[website redesigned; cannot find above summary; however detailed overviews exist in separate categories (see bottom of webpage above)]

Low Carbon Presentations

(at <https://www.ecovillagefindhorn.com/index.php/ecovillage-findhorn/resources>)

“Over 10 years CIFAL Findhorn/Scotland has hosted over 100 seminars addressing policy development and technical issues related to climate change, renewable energies, biodiversity, low-carbon housing, SDGs, circular economy, green jobs, transition towns, local and bioregional food systems, hydrogen economy, sustainable islands and many other themes.”

Centre for Alt Tech

@centre_alt_tech

The Centre for Alternative Technology is an environmental education charity providing practical solutions for sustainability. (Location: Machynlleth, Wales)

“We offer solutions to some of the most serious challenges facing our planet and the human race... Leading by example, we aim to show that living more sustainably is not only easy to attain but can provide a better quality of life. Our site is a unique and valuable practical demonstration centre, which includes: photovoltaics; solar thermal; a micro-grid; off-grid and grid-connected systems; biomass combined heat and power (CHP); hydro; air source heat pumps; a community heat main; a range of small to medium wind turbines; two reed bed systems; off-mains water supply; and extensive organic gardens.... Our day-to-day activities include a) running a visitor centre which is open 7 days a week, with 7 acres of interactive displays b) providing curriculum-based education to visiting schools, colleges and universities.”

[website redesigned; cannot find above summary; however, detailed overviews exist in separate categories (see “Free Information Services at <https://www.cat.org.uk/info-resources/free-information-service/>)

“Since its inception in 2007, the Zero Carbon Britain project (also by CAT) has offered the hard data and confidence required for visualising a future where we have risen to the demands of climate science. It has helped to reduce fear and misunderstandings and open new, positive, solution-focused conversations....

“We can provide a reliable energy supply for the UK with 100% renewable energy sources and flexible carbon neutral back up.
“We can grow the vast majority of the food we need for a healthy, low carbon diet, and manage our land to capture carbon, nurture biodiversity and increase the health and resilience of our ecosystems.
“We can deliver a modern lifestyle, create employment, improve our wellbeing, and ensure that the future we leave for our children and generations to come is safe and sustainable.”

(However) *“Changing how billions of people live on Planet Earth is a very special kind of problem, as the forces that shape our lives exist on many different levels. Rather than an unresolved technical challenge, it is increasingly accepted that we face a mix of economic, cultural and psychological barriers.”*

[Three paragraphs above were at the home page of “Zero Carbon Britain”; however, their website was redesigned, above quote may be part of Introduction to “Raising Ambition: Zero Carbon Scenarios from Around the World” (at <https://www.cat.org.uk/info-resources/zero-carbon-britain/research-reports/zero-carbon-britain-raising-ambition/>)]

→(New) “New hub and innovation lab to share zero carbon solutions” (July 29. 2019) “A new Zero Carbon Britain Hub and Innovation Lab is being launched at CAT later this year to help communities, local authorities and policymakers to create Zero Carbon Action Plans, and to provide support for the development of innovative solutions.” [From a blog post at the Centre for Alternative Technology (at <https://www.cat.org.uk/new-hub-and-innovation-lab-to-share-zero-carbon-solutions/>)]

Green America

@GreenAmerica

Our mission is to harness economic power to create a socially just and environmentally sustainable society. #VoteWithYourDollar #SkiptheSlip #CleanUpWireless

Village Vancouver

@villagevan

Connecting people at a neighbourhood level to create practical models for community resilience. An active member of the @TransitionTowns Network.

Village Earth

@VillageEarthOrg

Village Earth provides training, consulting, and other support services to the development community.

MIT D-Lab

@dlab_mit

MIT D-Lab works with people around the world to develop and advance collaborative approaches and practical solutions to global poverty challenges.

BerkShares, Inc.

@BerkShares

Local Currency for Berkshire County, MA, celebrating local heroes, local artists, and locally owned businesses

Bristol Pound

@BristolPound

The Bristol Pound is Bristol's local currency. It's money that stays in the city, supports local business and makes Bristol's economy fairer and stronger.

Lowimpact.org (LILI)

@LowimpactOrg

Let's build a sustainable, non-corporate system. Visit our website for things that you can do.

Food Solutions New England (2,565 followers)

@FoodSolutionsNE

Six state regional network creating a strong, just, healthy food system & economy for all of New England. #foodjustice #sustainability Based at UNH.

Mini-Grids Partnership

@MiniGrids

The Mini-Grids Partnership works to accelerate the development of mini-grids and contribution to achieving Sustainable Energy for All. (link: <http://bit.ly/2v1rlxv>)

Greenlight Planet

@GLP_SunKing

Delivering affordable, honest energy to the world's two billion under-electrified consumers. Makers of the award winning #SunKing solar lights!

Solar Cookers Int'l

@solarcookersint

Solar Cookers International promotes solar thermal technology for cooking and water pasteurization to benefit people and the environment.

Futurepump

@futurepump

Low-cost #solar irrigation pumps for the world's 500 million one acre farmers. #agriculture #lowcarbon #innovation contact us via our website

IV. Brief Summary of This Writer's Solution Perspective

A. This writer believes that if many people could see and feel the practical value of carrying out the kind of collaborative problem solving and community education initiatives advocated for by this paper (Brainstorming 100% ASAP; Community Visioning; Neighborhood Learning Centers; etc. p. 30-36), such collaborative, solution-oriented activity could become a common experience... a common cultural tradition... a cultural tradition which can bring many diverse communities of people together, in a fellowship of people working towards the greater good of the whole... and a cultural tradition which can help pass on to future generations the most treasured wisdom human beings have accumulated in more than 5,000 years of human history.

B. This writer prefers priorities (for urgently and drastically cutting global emissions) be given to small cities, towns, and villages:

- which have less complex infrastructure and less complex vulnerabilities
- which are more sustainable-friendly in the long run
- where more emphasis can be given to downsizing and focusing on what basic necessities are most needed
- where it is easier to see the consequences of our actions and
- where a truly natural circular economy (sewage treatment; food miles; less packaging; zero waste; etc.) is much easier to implement, and more likely to actually happen.

C. From Worldwatch Institute "State of the World 2004: Special Focus--The Consumer Society"
(Note: quotes here can be confirmed by phrase searches in google book version)

- a) "The energy invested in a particular thing, during its life from cradle to grave, is called the 'embodied energy' of that object. The amount of embodied energy that an item contains depends on the technology used to create it (the origin of materials inputs, how they were created and transported, etc.), the nature of the production system, and the distance the item travels from inception to purchase."
- b) "By supporting items and processes that have lower embodied energy, as well as the companies that produce them, consumers can significantly reduce society's energy use."

D. From "Why the Village Movement?" by J.C. Kumarappa (economist who worked with Gandhi)

"... every article in the bazaar has moral and spiritual values attached to it... if we feel it is beyond us to guarantee the concomitant results of all our transactions, it necessarily follows that we must limit our transactions to a circle well within our control. This is the bed rock of swadeshi. *The smaller the circumference, the more accurately can we gauge the results of our actions, and (the) more conscientiously shall we be able to fulfill our obligations as trustees.*"

E. If many people can learn to find contentment and quality of life while consuming much less, this limiting of desires at the 'root' will save much trouble trying to respond to the symptoms of unrestrained desires--as they materialize worldwide. This part of the value and benefit of spiritual teachings is often overlooked. (SP)